

PTO 05-2299

CY=JA DATE=19990709 KIND=A
PN=11-187126*

INFORMATION TRANSMISSION DEVICE
[Jouhou soushin souchi]

Toru Yamakita

UNITED STATES PATENT AND TRADEMARK OFFICE
Washington, D.C. February 2005

Translated by: FLS, Inc.

PUBLICATION COUNTRY	(19):	JP
DOCUMENT NUMBER	(11):	110187126
DOCUMENT KIND	(12):	A [PUBLISHED UNEXAMINED APPLICATION]
PUBLICATION DATE	(43):	19990709
APPLICATION NUMBER	(21):	090366400
APPLICATION DATE	(22):	19971224
INTERNATIONAL CLASSIFICATION	(51):	H 04 M 3/42; G 06 F 13/00, 15/00; H 04 M 3/46, 11/00; H 04 N 1/00, 1/32
INVENTOR	(72):	YAMAKITA, TORU
APPLICANT	(71):	CASIO COMPUTER CO., LTD.
TITLE	(54):	INFORMATION TRANSMISSION DEVICE
FOREIGN TITLE	(54A):	JOUHOU SOUSHIN SOUCHI

[Claim 1] With respect to information transmission devices that transmit electronic information addressed to terminals to terminals on a network,

an information transmission device characterized by being equipped with:

a first storage means that stores the activity schedule of the user;

a second storage means that stores the identification information of the terminals included in said network that said user may utilize;

an extracting means that, when electronic information is transmitted to said user, specifies a terminal that said user may operate with a high probability by referring to the stored information in said first storage means and that extracts the identification information of said specified terminal from said second storage means; and

a transmitting means that transmits said electronic information to the terminal that corresponds to the stored information extracted by said extracting means.

[Claim 2] With respect to information transmission devices that transmit electronic information addressed to terminals to terminals on a network,

an information transmission device characterized by being equipped with:

a first storage means that stores the activity schedule of the user and that also stores information on the usage history of terminals that said user operated in association with said activity schedule;

* Numbers in the margin indicate pagination of the foreign text.

a second storage means that stores the identification information of the terminals on said network that said user may utilize;

an extracting means that, when electronic information is transmitted to said user, specifies a terminal that is the same as the terminal said user was operating at a similar time in the past by referring to the stored information in said first storage means and that extracts the identification information of said specified terminal from said second storage means; and

a transmitting means that transmits said electronic information to the terminal that corresponds to the stored information extracted by said extracting means.

[Claim 3] An information transmission device characterized by the usage history stored in the first storage means of Claim 2 of terminals that said user operated being reported by means of a program that is activated in response to a prescribed operation condition of said terminals.

[Claim 4] With respect to the extracting means of Claim 1, an information transmission device characterized by a prescribed terminal being specified if it was not possible to specify a terminal that said user may operate with high probability.

[Claim 5] With respect to the extracting means of Claim 2, an information transmission device characterized by a prescribed terminal being specified if it was not possible to specify a terminal that is the same as the terminal said user had been operating at a similar time in the past.

[Claim 6] A recording medium characterized by storing a program that

is for actualizing the first storage means, the second storage means, the extracting means, and the transmitting means of Claim 1.

[Claim 7] A recording medium characterized by storing a program that is for actualizing the first storage means, the second storage means, the extracting means, and the transmitting means of Claim 2.

[Detailed Explanation of the Invention]

[0001] [Technical Field of the Invention]

The present invention pertains to information transmission devices, specifically to information transmission devices that transmit electronic information, such as text information, picture information, and voice information, to electronic information reproduction terminals (hereafter simply referred to as terminals), such as telephone terminals, facsimile terminals, electronic mail terminals, or pagers over networks, via said networks that consist of LAN, WAN, cable communication, wireless communication, or combinations of these.

[0002] [Background of the Invention]

The modes of information exchanged through a network are audio, picture, and text information and vary, and the types of terminals that we use daily are telephone terminals, facsimile terminals, electronic mail terminals, pagers, etc. and vary depending on the above information modes. Therefore, selection of an appropriate terminal that conforms to the information mode is essential for the transmission of accurate information. Incidentally, since portable information terminals equipped with a terminal function are becoming very popular in recent years and terminals that can be carried around are also adding to the types of fixed-type terminals, the range of the above selections is widening even

more.

[0003] [Related Art]

All of the terminals on a network have unique identification information within the same network. Typically, these are line numbers of telephone terminals. By sending out these telephone numbers over the network, a necessary circuit is configured with one or several exchanges in order to make it possible to exchange voice information between specific terminals. Or, if the terminals are on a LAN (local area network), they have unique node information, such as Ethernet addresses or IP addresses, and by transmitting electronic information that has such node information added to it, the electronic information can be transmitted to a specific terminal.

[0004] [Problems that the Invention is to Solve]

However, since the destinations of electronic information are determined by using the unique identification information assigned to each terminal in the above-mentioned conventional technique, if the user to which the electronic information will be sent is not near the destination terminal, the user cannot acquire the electronic information at the same time as the transmission. Therefore, there is a problem in that the immediacy of information transmission is poor. Figuratively speaking, the conventional technique is the same as PO boxes. In other words, although the location of a PO box is fixed, the user who owns the PO box is not at the same location as the PO Box and often constantly changes his/her location. Therefore, unless the PO Box is actively checked, transmission of electronic information cannot be known.

[0005] In light of this, the purpose of the invention is to supply

an information transmission device capable of transmitting electronic information to a terminal by selecting a terminal near the location of the user and capable of thus improving the immediacy of information transmission.

[0006] [Means for Solving the Problems]

/3

With respect to information transmission devices that transmit electronic information addressed to terminals to terminals on a network, an information transmission device of the invention of Claim 1 is characterized by being equipped with: a first storage means that stores the activity schedule of the user; a second storage means that stores the identification information of the terminals included in said network that said user may utilize; an extracting means that, when electronic information is transmitted to said user, specifies a terminal that said user may operate with high probability by referring to the stored information in said first storage means and that extracts the identification information of said specified terminal from said second storage means; and a transmitting means that transmits said electronic information to the terminal that corresponds to the stored information extracted by said extracting means. With respect to information transmission devices that transmit electronic information addressed to terminals to terminals on a network, an information transmission device of the invention of Claim 2 is characterized by being equipped with: a first storage means that stores the activity schedule of the user and that also stores information on the usage history of terminals that said user operated in association with said activity schedule; a second storage means that stores the identification information of the terminals on said

network that said user may utilize; an extracting means that, when electronic information is transmitted to said user, specifies a terminal that is the same as the terminal said user was operating at a similar time in the past by referring to the stored information in said first storage means and that extracts the identification information of said specified terminal from said second storage means; and a transmitting means that transmits said electronic information to the terminal that corresponds to the stored information extracted by said extracting means. An information transmission device of the invention of Claim 3 is characterized by the usage history stored in the first storage means of Claim 2 of terminals that said user operated being reported by means of a program that is activated in response to a prescribed operation condition of said terminals. An information transmission device of the invention of Claim 4 is characterized by a prescribed terminal being specified if the extracting means of Claim 1 could not specify a terminal that said user may operate with high probability. An information transmission device of the invention of Claim 5 is characterized by a prescribed terminal being specified if the extracting means of Claim 2 could not specify a terminal that is the same as the terminal said user had been operating at a similar time in the past. A recording medium of the invention of Claim 6 is characterized by storing a program that is for actualizing the first storage means, the second storage means, the extracting means, and the transmitting means of Claim 1. A recording medium of the invention of Claim 7 is characterized by storing a program that is for actualizing the first storage means, the second storage means, the extracting means, and the transmitting means of Claim 2.

[0007] [Embodiments of the Invention]

In the following, embodiments of the invention will be explained by using an information transmission device that transmits picture information to a facsimile terminal connected to a telephone line network as an example and by referring to figures. In Fig. 1, [1] is a telephone line network. The telephone line network [1] contains a commercial or privately-owned cable communication network, wireless communication network, satellite communication network, or a communication network consisting of a mixture of these and also contains many exchanges that make up lines between optional terminals by flexibly combining these networks. In this manner, it forms a network for the transmission of electronic information.

[0008] In addition to many telephone terminals and various information terminal devices not shown in the figure, many facsimile terminals [2] (which are no more than examples of terminals) are connected to the telephone line network [1]. Moreover, an information transmission device [3] capable of transmitting electronic information (picture information in this case) to a specified user is connected to at least one of the facsimile terminals [2]. The information transmission device [3] functions as a center device that is connected to a network, such as the telephone line network [1] or the Internet [3a]. Information transmitted from terminals (e.g. facsimile terminals [2] connected to the telephone line network [1] or various information terminals [3b] connected to the Internet [3a] such as a mail transmitting/receiving terminal, portable information terminal, personal computer, etc.) enters the center device through the telephone line network [1] or the Internet

[3a] and then becomes transmitted to another terminal by going through the telephone line network [1] or the Internet [3a] again. Moreover, information that was generated by means of various information services in the center device is also transmitted appropriately to a terminal through a network.

[0009] As described also at the beginning, each of the facsimile terminals [2], which are simply examples, has assigned to it identification information that is unique within the same network. In general, this identification information is line numbers, but single alphabets will be utilized as identification information in this embodiment for convenience. In other words, identification information, [A] through [L], is assigned to the facsimile terminals [2] shown. In a case in which electronic information addressed to a user is transmitted from the information transmission device [3], if the terminal that the user is likely to utilize (which will be a facsimile terminal [2] in this case) is always prescribed, the transmission of the electronic information is simple. For instance, if the terminal is a facsimile terminal [2] with identification information [A] (hereafter referred to as terminal [A]), the electronic information should be transmitted after sending the identification information [A] to the telephone line network [1] to form a line between the information transmission device [3] and the terminal [A]. However, if there are multiple facsimile terminals [2] that the user may use such as a facsimile terminal [2] (hereafter referred to as terminal [D]) with identification information [D] installed in a business office (company), a facsimile terminal [2] (hereafter referred to as terminal [G]) with identification information [G] installed at home, and a facsimile

terminal [2] (hereafter referred to as terminal [J]) with identification information [J] installed at a client's place that the user often visits, it is necessary to transmit the information after manually selecting one of these terminals, [D], [G], and [J]. This is troublesome and is particularly difficult for someone, such as a sales person, who moves around a lot to select an appropriate terminal.

[0010] Figure 2 is a schematic block diagram of the information transmission terminal [3] of this embodiment. This information /4
transmission terminal [3] is equipped with a CPU [6] (central processing unit) that executes a program incorporated from a portable or fixed recording medium [5] through a recording medium driver [4] under a specific OS (operating system); a RAM [7] (random-access memory) that makes up a memory space to be used for the execution of said program; and a communication control part [8] that creates an interface with the telephone line network [1] not shown. It is also equipped with several tables (address table [10], terminal location table [11], and action table [12] in the figure) that are configured in a storage device [9], such as a hard disk, and a bus [13] that transfers data between these parts. For convenience, it appears as if the tables, [10] ~ [12], and the bus [13] were directly connected to one another in the figure. The bus [13] is physically connected only to the storage device [9].

[0011] The structures of the tables, [10] ~ [12], will be explained below. First, Figure 3 indicates the structure of the address table [10]. The address table [10] consists of multiple records of individual users (users authorized to use the facsimile terminals [2]). Under each user identification code, each record has multiple fields for each terminal

type, and one or more address fields can be stored in each field. In addition, the address table [10] of the figure has fields named Mail, Web, Telephone, FAX, and Pager (hereafter referred to as mail field, Web field, telephone field, FAX field, and pager field), which make up the best mode that matches all terminals by conforming to the electronic information modes (text, picture, voice, etc.). However, if the facsimile terminals [2] are the only targets, it is permissible to provide just the FAX fields.

[0012] In Fig. 3, the mail 1, mail 2, mail 3, ... of a mail field are subfields that store the fields for addresses of the mail terminals that the user of the record may utilize. In the same manner, the address 1, address 2, ... of a Web field are subfields that store the fields for addresses of the browser terminals that the same user may utilize. The number 1, number 2, number 3 ... of a telephone field are subfields that store the fields for addresses of the telephone terminals that the same user may utilize. The number a, number b, number c ... of a FAX field are subfields that store the fields for addresses of the FAX terminals that the same user may utilize. The address a, address b, ... of a pager field are subfields that store the fields for addresses of the paper terminals that the same user may utilize. The address table [10] having such a structure is provided so that, when electronic information is transmitted to a specified user in the center device within the network or to the center device by a third person connected to the network, the user identification code can be specified in order to refer to the later-described terminal location table [11] based on the address of the transmission event.

[0013] Figure 4 indicates the structure of the terminal location table [11]. In the same manner as the above-mentioned address table [10],

the terminal location table [11] consists of multiple records for the individual users. Each record can be referred to individually based on user identification codes and contains fields (terminal a, b, and c or terminal x, y, and z) for all terminals that each user can utilize. Moreover, each field can store identification information, such as the location information of the terminal, the information mode that the terminal can process, the address of the terminal, and the stationary/portable classification (a terminal that is fixated or a portable terminal that can be carried around) of the terminal.

[0014] It is best to acquire the location information of a terminal periodically or as necessary from a location detector (Note 1) attached to each terminal. This method is suitable for portable information terminals that frequently change their locations. As for stationary terminals, it is permissible to store their location information in the center side in advance since their locations seldom change. In this case, if the installation location of a terminal is changed, it can be reported (by means of a document, telephone call, etc.) to the center and the location can be locally registered and updated on the center side, or the location information can be updated based on a command from the terminal. Incidentally, the terminals (terminals, c and y) that have vacancies (indicated by horizontal lines for convenience) for location information in the shown terminal location table [11] are, according to the above explanation, portable information terminals that acquire location information from location detectors periodically or as necessary.

[0015] Note 1: For instance, a commonly known location detecting terminal to which the PHS technology is applied can be utilized. This

location detecting terminal measures the intensities of electric fields from multiple PHS base stations and sends them to a location information control center. In the position information control center, the coordinates (such as the latitude and longitude) of the current location of the location detecting terminal are calculated based on the principle of triangulation. By attaching this location detecting terminal to a portable information terminal, the current location of the portable information terminal can be accurately detected by simply sending the address of the location detecting terminal to PHS base stations, and therefore, the location information of the terminals (terminal c or terminal z) included in the terminal location table [11] can always be kept updated. In addition, since the location detecting terminal of the above example is equipped with a push button that is notifying its own location, it is permissible to notify its location via the location information control center by pressing this button and to thus update the location information of the terminal location table [11].

[0016] Figure 5 shows the structure of an action table [12]. In the same manner as the above address table [10], the action table [12] consists of multiple records of individual users. Each record can be separately referred to based on user identification codes and also includes address fields that store the addresses used to acquire the location information of the users (user location detecting addresses, such as the addresses of the above location detecting terminals carried by the users) and /5 schedule fields that store the past and future activity schedules of each user, the location history of each user, the history of the terminals that each user has used (used terminal history), etc. In this case, the

shown action table [12] lists the activity schedule of one user (referred to as α for convenience) that indicates that the user worked at the company in the morning of o (date) o (month), visited a client A from the afternoon, and returned to the company to work overtime. The locations of the user during this time are recorded as p1, p2, p3..., and it is also recorded that the user operated the terminal b in the morning and during the overtime.

[0017] A user location can be updated based on the information from the above location detecting terminal that the user carries. Moreover, terminal operation information can be updated by notifying the name of the user from a prescribed program (described later) that is activated in response to a prescribed operation condition of the terminal or can instead be updated based on the records of the network server being accessed (the logon time, logoff time, and user name of the terminal). Note, however, that since activity schedules are difficult for the center side to know, they should be declared by the users. In other words, each user should operate a terminal in order to record one's own activity schedule in the applicable field of the action table [12]. Moreover, this information can be utilized if the individual users' schedule data are controlled by the server.

[0018] It is desirable that the above three tables (address table [10], terminal location table [11], and action table [12]) be called out to the user's terminal when specified by the user so that the user can optionally modify, add to, or delete the content. Or, it is permissible instead to update the content by transmitting the item that should be updated, added, or deleted in a table to the center by means of e-mail,

etc.

[0019] Figure 6 is a flow of the prescribed program that becomes activated in response to a prescribed operation condition (In the figure, the condition is that the power source is on.) of a terminal. According to this flow, when the terminal's power source is turned on, the current date and hour are first recorded as the "activation date and hour" of the terminal ([S1]), and a necessary process is then executed ([S2]). After it is determined that this process has been finished ([S3]), the current date and hour will be recorded as the "finish date and hour" of the terminal ([S4]). This "finish date and hour" and the earlier "activation date and hour" are transmitted to the center as a set along with the identification code of the terminal ([S5]). After it is determined that this transmission has been completed ([S6]), the power source of the terminal is turned off ([S7]). By incorporating such a program in each terminal, used terminal histories can be registered accurately in the action table [12].

[0020] Figure 7 is a process flow of this embodiment in which the above three tables (address table [10], terminal location table [11], and action table [12]) are utilized. According to this figure, when electronic information is transmitted, the user identification code (identification information unique to the user) is specified by searching the address table [10] ([S10]). Next, the location information that is the closest to the current date and hour is acquired from the user location history that corresponds to the user identification code by searching the action table [12] ([S11]). Moreover, the location information of the terminal that the user is using or may use is acquired by searching the

terminal location table [11] ([S12]). Based on these acquired information, the terminal that is the nearest to the location information of the user is specified ([S13]). Then, it is determined whether or not the distance between the specified terminal and the user is within a prescribed range ([S14]). If it is within the range, the specified terminal is determined as the terminal that should receive the transmission ([S15]). Then, the information mode of the terminal is investigated by referring to the terminal location table [11] and it is determined whether or not its information mode is the same as that of the target electronic information ([S16]). If not, a mode conversion process (Note 2) is executed in order to match with the information mode of the target terminal ([S17]). Then, the address is changed to that of the target terminal ([S18]), and the electronic information is transmitted to the terminal ([S19]). Then, the process is terminated.

[0021] Note 2: In a mode conversion process, for example, a voice synthesis process is executed in order to convert information from e-mail or a web text to a telephone call, a character recognition process is executed in order to convert information from a FAX to e-mail or a web text, a voice synthesis process is executed in order to convert information from a FAX to a telephone call, or a voice recognition process is executed in order to convert information from a telephone call to e-mail, a FAX, or a web text.

[0022] On the other hand, if the distance between the specified terminal to the user is not within a prescribed range in the above [S14], the flow of Fig. 8 is taken. In addition, the flows of Fig. 7 and Fig. 8 were divided into two flows due to the sizes of the figures. The flow

of Fig. 8 is, in essence, the above flow up to and including the above [S14], and if a terminal located near the user cannot be specified, a terminal that may be located near the user is presumed by referring to the past similar schedules. Schedules used for the similarity evaluation are divided into a first pattern, in which the schedules are those of the current day, and a second pattern, in which the schedules are those of the near future. According to the first pattern, the current day's schedule is read from the action table [12] ([S20]), and if the reading of the current day's schedule has been completed ([S21]), it is determined whether or not a schedule that has a similar content as the schedule of the current day existed in the past ([S22]). If a schedule exists, it is determined whether or not a terminal is recorded in the used terminal history that corresponds to the past schedule ([S23]). If there is a record, the terminal is specified ([S24]), and the process advances to [S15] of Fig. 5. Therefore, according to this first pattern, if a terminal located near the user cannot be specified, a terminal that may be located near the user can be presumed based on a past schedule that is similar to the current day's schedule.

/6

[0023] On the other hand, the second pattern is executed if the schedule of the current day does not exist, if the schedule of the current day exists but there is no similar past schedule, or if there is a past schedule that is similar to that of the current day but there is no terminal registered in the used terminal history. In any of these cases, the process starts from finding the future schedule that is nearest to the current date and hour from the action table ([S25]). If the future schedule is found ([S26]), it is determined whether or not a schedule that is similar

in content to the future schedule existed in the past ([S27]). If one exists, it is determined whether or not a terminal is recorded in the used terminal history that corresponds to the past schedule ([S28]). If there is a record, the terminal is specified ([S24]), and the process advances to [S15] of Fig.5. Therefore, according to this second pattern, a terminal that may be near the user can be presumed based on the past schedule that is similar to the future schedule if the terminal located near the user could not be specified from the current day's schedule. Moreover, if a terminal cannot be specified even with the second pattern, in other words, if there is no future schedule, if there is no similar past schedule even if a future schedule exists, or if no terminal is registered in the past schedule, a prescribed terminal is specified. This terminal is, for example, a portable information terminal or a terminal that is set for priority use and is a frequently used terminal.

[0024] Figure 9 is a modified version of the flow of Fig.8. In this flow, a determination is made as to whether the current day is a working day or a nonworking day based on what day of the week it is ([S30]). If, for example, the current day is a working day, all of the used terminal histories that belong to the past working days are retrieved from the action table [12], and the terminal that has been utilized most often during a certain time zone that includes the current time of the current day is detected ([S31]~[S33]), and the terminal is specified. If a terminal is not detected, a prescribed terminal is specified in the same manner as in [S29] of Fig.8 ([S36]). Moreover, working days and nonworking days are divided in this example since there is usually a clear discrepancy in the terminal usage tendencies between working days and nonworking days.

As long as there is such a discrepancy in the tendencies, the division can be based on the days of the week, time zones, etc. instead.

[0025] As mentioned earlier, according to the process flows of Fig.7 and Fig.8 or Fig.7 and Fig.9, electronic information can be transmitted to a terminal that is located near the user and the immediacy of information transmission can be secured. Therefore, a technology that is particularly suitable for the field of mobile computing can be provided.

[0026] Moreover, although the invention was applied to facsimile terminals [2] connected to a telephone line network [1] in the examples of the above embodiments, the invention is not limited to this. The telephone line network [1] may instead be a LAN, WAN, or the Internet, and the facsimile terminals may instead be telephone terminals, mail transmitting/receiving terminals, portable information terminals, personal computers, workstations, etc.

[0027] Moreover, the primary functions (i.e., the address table [10] of Fig. 3, the terminal location table [11] of Fig. 4, the action table [12] of Fig. 5, and process flows of Fig. 6 ~ Fig. 9) of each of the above embodiments can naturally be realized by means of hard logic instead, but the use of software is desirable when the development efficiency is taken into consideration. In this case, a recording medium (e.g., floppy disk, MO, CD, hard disk, semiconductor memory, etc.) that stores a program capable of realizing the above principal functions should be provided. By installing such a program to a computer equipped with an Internet card, modem, terminal adaptor, etc., the effects of the above embodiments can be achieved.

[0028] [Effects of the Invention]

According to the invention of Claim 1, when electronic information is transmitted to a user, a terminal that is highly likely to be operated by said user is specified by referring to the activity schedule of said user, and said electronic information is transmitted to said specified terminal. Therefore, even if the user moves around a lot, the electronic information can be transmitted to a terminal located near the user, and the immediacy of information transmission can therefore be improved. According to the invention of Claim 2, the usage history information of the terminals that said user has operated is stored in association with the user's activity schedule, and based on these information, a terminal that said user may utilize with a high probability is specified. Therefore, the accuracy of terminal specification can be increased. According to the invention of Claim 3, since the history of the terminals that the user has operated is constantly updated, the accuracy of terminal specification can be increased even more. According to the invention of Claim 4 or Claim 5, if no terminal could be specified, a prescribed terminal is specified instead. Therefore, the destination of a transmission will not be unknown and it is therefore possible to keep the information from being undeliverable.

[Brief Description of the Drawings]

[Figure 1] A figure showing the structure of a telephone line network of an embodiment.

[Figure 2] A figure showing the schematic structure of an information transmission device.

[Figure 3] A figure showing the structure of an address table.

[Figure 4] A figure showing the structure of a terminal location table.

[Figure 5] A figure showing the structure of an action table.

[Figure 6] A flow chart indicating the notification process of a terminal usage history.

[Figure 7] A flow chart (1/2) indicating a terminal specification process.

[Figure 8] A flow chart (2/2) indicating a terminal specification process.

[Figure 9] A flow chart (2/2) indicating another terminal specification process.

[Explanation of the Reference Numerals]

[1] = telephone line network

[2] = facsimile terminal

[3] = information transmission device

[4] = recording medium driver

[5] = recording medium

/7

[6] = CPU (extracting means, transmitting means)

[7] = RAM

[8] = communication control part (transmitting means)

[9] = storage device

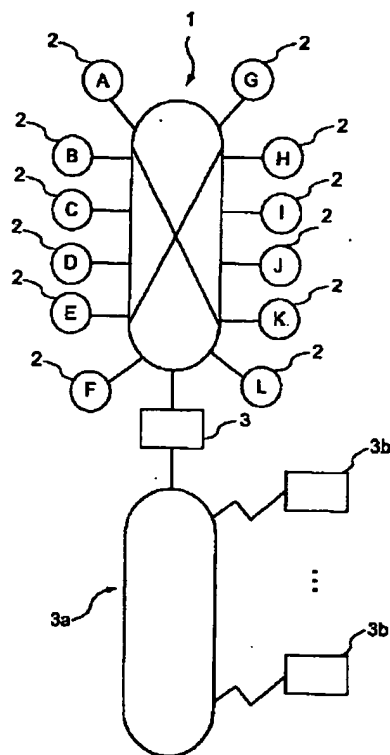
[10] = address table

[11] = terminal location table (second storage means)

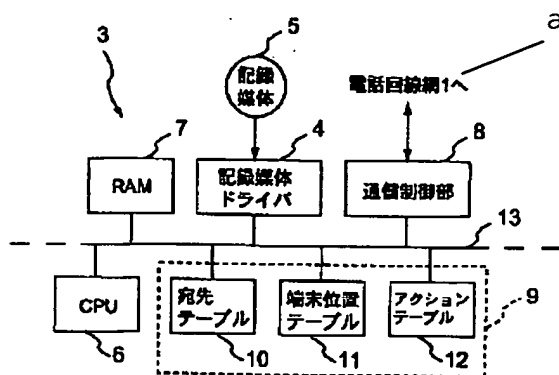
[12] = action table (first storage means)

[13] = bus

[Figure 1]

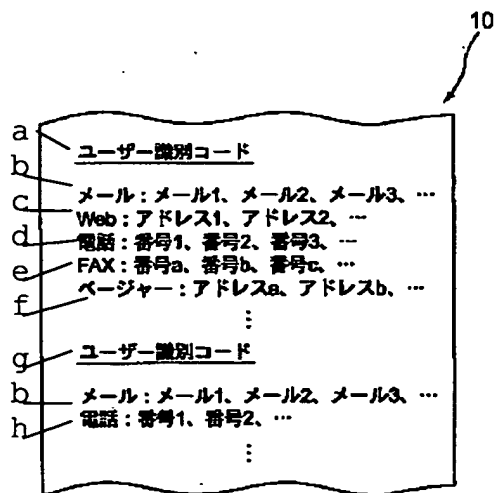


[Figure 2]



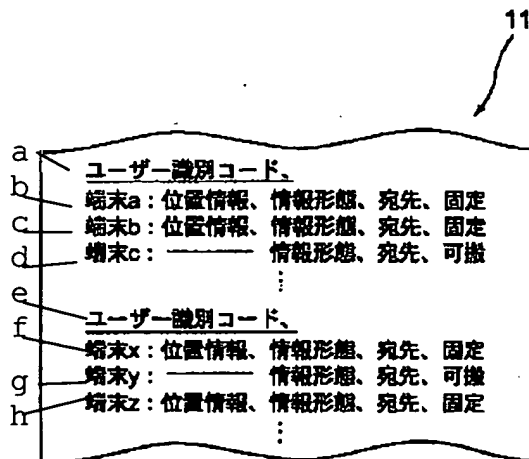
Key: 4) recording medium driver;
5) recording medium; 8) communication
control part; 10) address table;
11) terminal location table; 12) action
table; a) To telephone line network [1].

[Figure 3]



Key: a) User Identification Code;
b) E-mail: e-mail 1, e-mail 2, e-mail
3, ...; c) Web: address 1, address 2, ...;
d) Telephone: number 1, number 2,
number 3, ...; e) FAX: number a,
number b, number c, ...; f) Pager: address a,
address b, ...; g) User Identification
Code; h) Telephone: number 1, number
2, ...

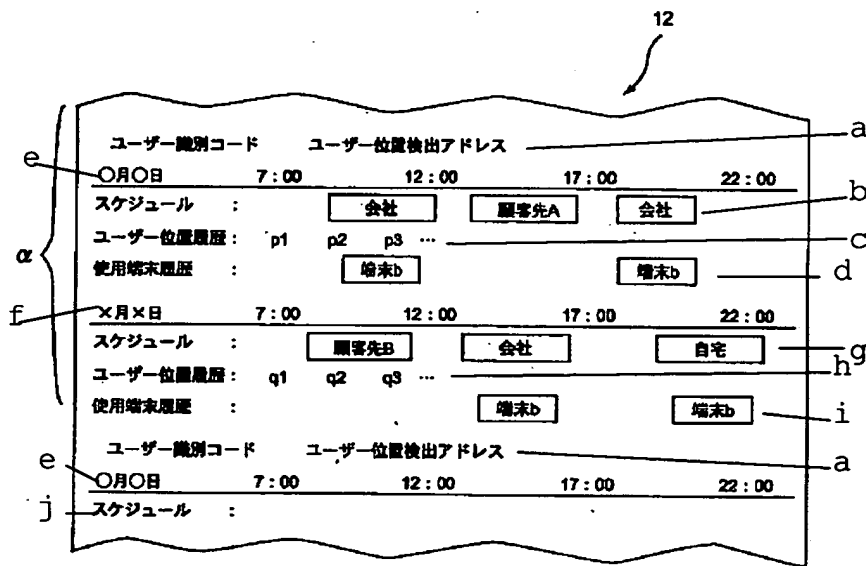
[Figure 4]



Key: a) User Identification Code; b) terminal a: location information, information mode, address, fixed; c) terminal b: location information, information mode, address, fixed; d) terminal c: location information, information mode, address, mobile; e) User Identification Code; f) terminal x: location information, information mode, address, fixed; g) terminal y: location information, information mode, address, mobile; h) terminal z: location information, information mode, address, fixed.

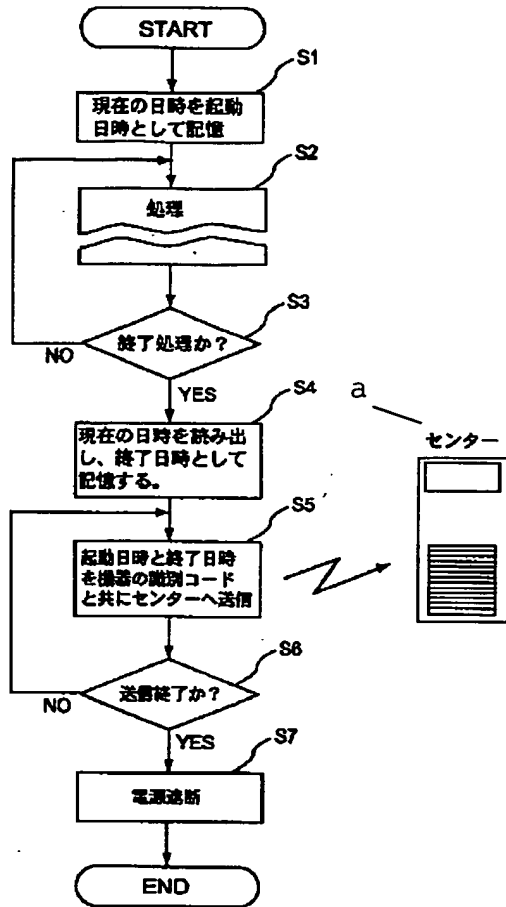
[Figure 5]

/8

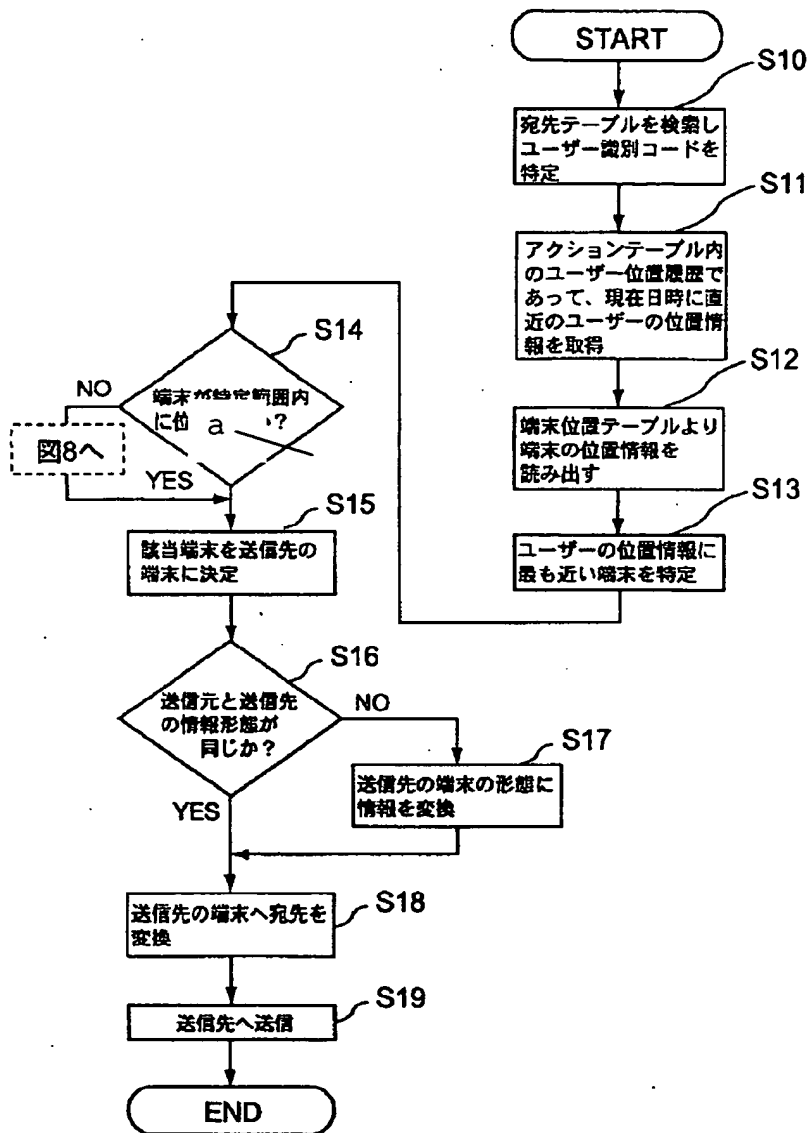


Key: a) User Identification Code, User Location Detection Address; b) Schedule: company, client A, company; c) User location history: p1, p2, p3...; d) Used terminal history: terminal b, terminal b; e) OO (month and date); f) XX (month and date); g) Schedule: client B, company, home; h) User location history: q1, q2, q3...; i) Used terminal history: terminal b, terminal b; j) Schedule.

[Figure 6]

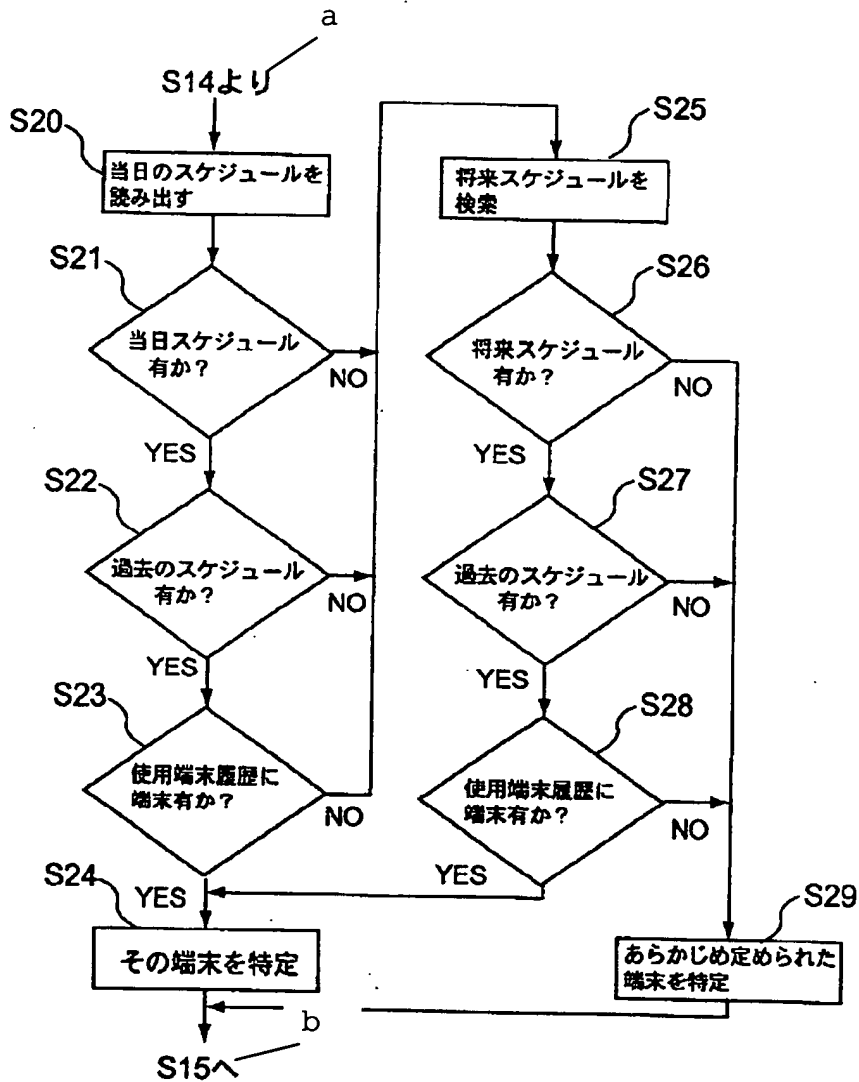


Key: a)Center; S1)The current date and hour are stored as activation date and hour.; S2)Processing.; S3)Has the process been completed?; S4)The current date and hour are read out and stored as the finish date and hour. S5)The activation date and hour and the finish date and hour are both transmitted to the center together with the identification code of the apparatus.; S6)Has the transmission been completed?; S7)The power is turned off.



Key: a) To Figure 8.; S10) The address table is searched and the user identification code is specified.; S11) The user's location information that is included in the user location history in the action table and that is very close to the current date and hour are acquired.; S12) Location information of the terminals are read from the terminal location table.; S13) A terminal that is the closest to the user's location information is specified.; S14) Is the terminal located within a prescribed range?; S15) The applicable terminal is determined to be the destination terminal.; S16) Are the information modes of the source of transmission and the destination of the transmission the same?; S17) The information is converted into the mode of the destination terminal.; S18) The address is changed to the destination terminal.; S19) The information is transmitted to the destination terminal.

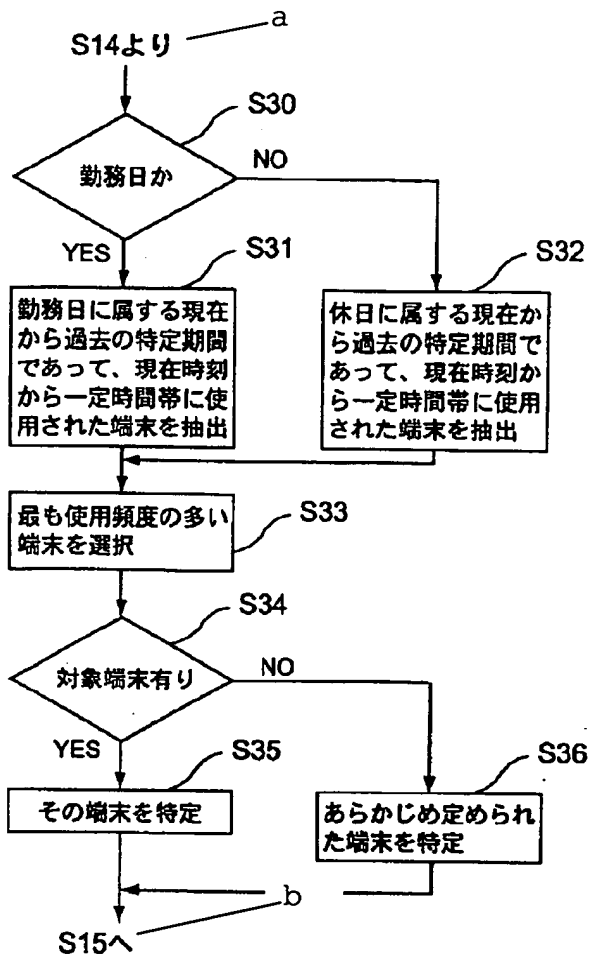
[Figure 8]



Key: a) From S14.; b) To S15.; S20) The current day's schedule will be read.; S21) Is there a schedule for the current day?; S22) Is there a past schedule?; S23) Is a terminal listed in the used terminal history?; S24) The terminal is specified.; S25) A future schedule will be retrieved.; S26) Is there a future schedule?; S27) Is there a past schedule?; S28) Is there a terminal listed in the used terminal history?; S29) A prescribed terminal is specified.

[Figure 9]

/11



Key: a) From S14.; b) To S15.; S30) Is it a working day?; S31) Terminals that were utilized in a certain time zone from the current time during a specific working day period from the past to the present.; S32) Terminals that were utilized in a certain time zone from the current time during a specific nonworking day period from the past to the present.; S33) The most frequently utilized terminal is selected.; S34) Is there a target terminal?; S35) The terminal is specified.; S36) A prescribed terminal is specified.

PAT-NO: JP411187126A

DOCUMENT-IDENTIFIER: JP 11187126 A

TITLE: INFORMATION TRANSMITTER

PUBN-DATE: July 9, 1999

INVENTOR-INFORMATION:

NAME	COUNTRY
YAMAKITA, TORU	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
CASIO COMPUT CO LTD	N/A

APPL-NO: JP09366400

APPL-DATE: December 24, 1997

INT-CL (IPC): H04M003/42, G06F013/00 , G06F013/00 , G06F015/00 , H04M003/46
 , H04M011/00 , H04N001/00 , H04N001/32

ABSTRACT:

PROBLEM TO BE SOLVED: To improve the immediacy of information transmission by referring to a behavior schedule on the occurrence of a transmission event of electronic information addressed to the user, specifying a terminal whose operation is made by the user with high possibility and sending information so as to select a terminal nearby a position of the user thereby sending electronic information to the selected terminal.

SOLUTION: On the occurrence of a transmission event of electronic information, a destination table 10 is retrieved to specify a user identification code and an action table 12 is retrieved to acquire position information, which is the closest to a current date, and time among user position histories corresponding to the user identification code, a terminal position table 11 is retrieved to acquire the position information of the terminal which is used with high possibility. Based on the terminal closest to position information of the user and the electronic information is sent to the terminal. Thus, the electronic information is sent to the terminal placed near the user in matching with the behavior of the user.

COPYRIGHT: (C)1999,JPO